

# Manipulating Perceived Threat and Efficacy through Disaster Risk Messaging: A Pilot Study

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## Background

- Disaster risk communication is a commonly used intervention strategy to disseminate critical information about hazard events in order to motivate preparedness behavior and mitigate the negative effects of disasters.
- However, few studies have experimentally manipulated perceived threat and self-efficacy in preparedness messages to examine their effect on preparedness intentions and behavior (Adame & Miller, 2015; Bradley et al., 2016; Marchand & Diallo, 2020).
- Additionally, no extant literature has manipulated collective efficacy (i.e., an individual's perception of their community's ability to achieve a goal), despite its importance as a predictor of preparedness outcomes (Mash et al., 2022)
- Based on an integration of the Extended Parallel Process Model (EPPM) and the Risk Perception Attitude (RPA) framework, **this pilot study aimed to experimentally manipulate threat perception, self-efficacy, and collective efficacy through disaster preparedness messages.**

## Methods

### PARTICIPANTS

- 186 college students; 85% female, 12% male, 3% gender diverse
- 43% White, 19% Asian, 15% Multiracial, 9% Black, 8% Hispanic or Latino, 1% Middle Eastern/Northern African

### PROCEDURE

- Participants were recruited from the GW Psychology Subject Pool. At Time 1, participants completed measures of perceived threat, self-efficacy, collective efficacy, and demographics. One week later, participants at Time 2 read one of eight message conditions (high/low threat and either high/low self-efficacy or high/low collective efficacy) and then completed the same measures of perceived threat, self-efficacy, and collective efficacy again.

## Methods

### MEASURES

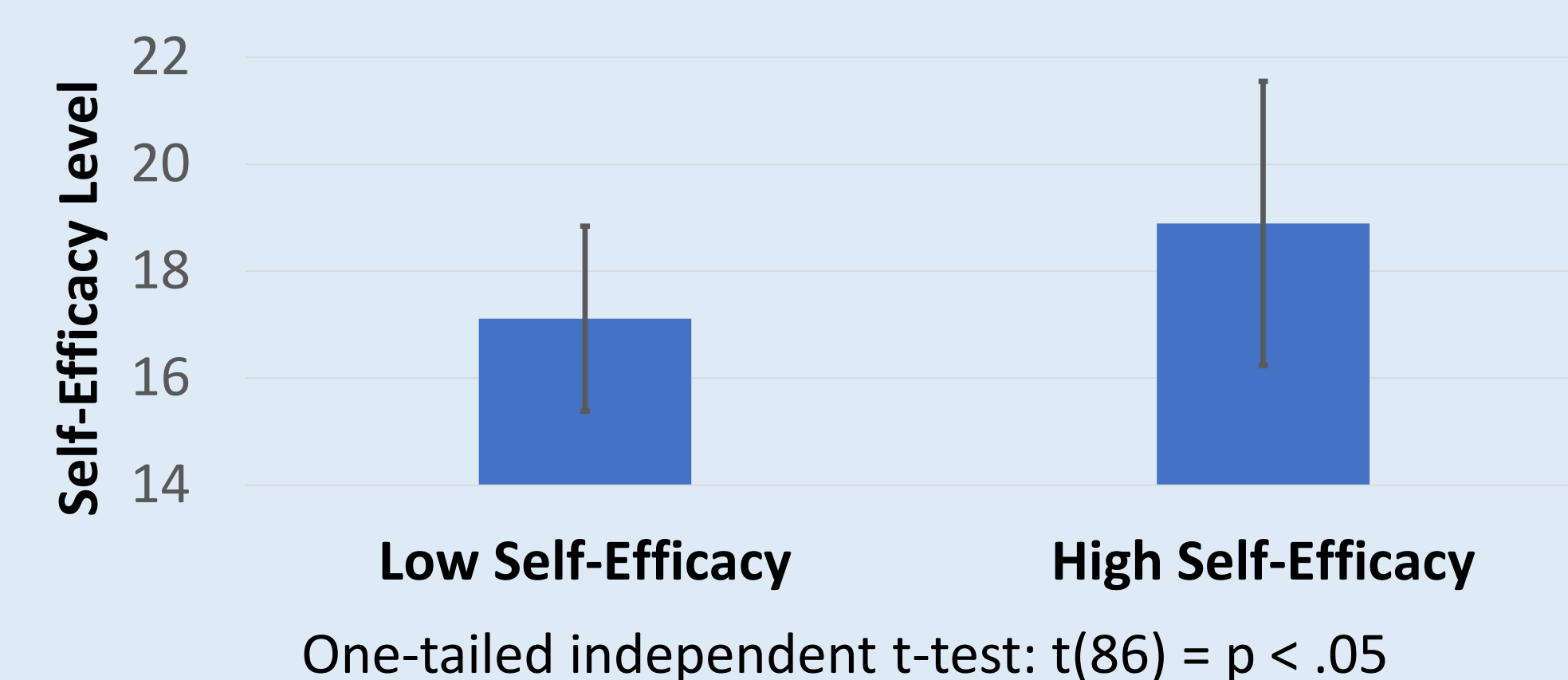
- Perceived Threat** (Marceron & Rohrbeck, 2018)
  - 6-item measure to assess perceived severity and likelihood of disaster, Cronbach's alpha = .71
  - Example:** "In your view, what is the likelihood of a natural or human-made disaster in your city or town in the next six months?"
- Emergency Preparedness Self Efficacy (EPSE)** (Burns et al., 2014)
  - 7-item measure, Cronbach's alpha = .84
  - Example:** "I can protect myself and my property in an emergency"
- Emergency Preparedness Collective Efficacy** (modified from Burns et al., 2014)
  - 7-item measure, Cronbach's alpha = .88
  - Example:** "my community can protect ourselves and our property in an emergency"

## Results

Figure 1: Low vs High Threat Conditions

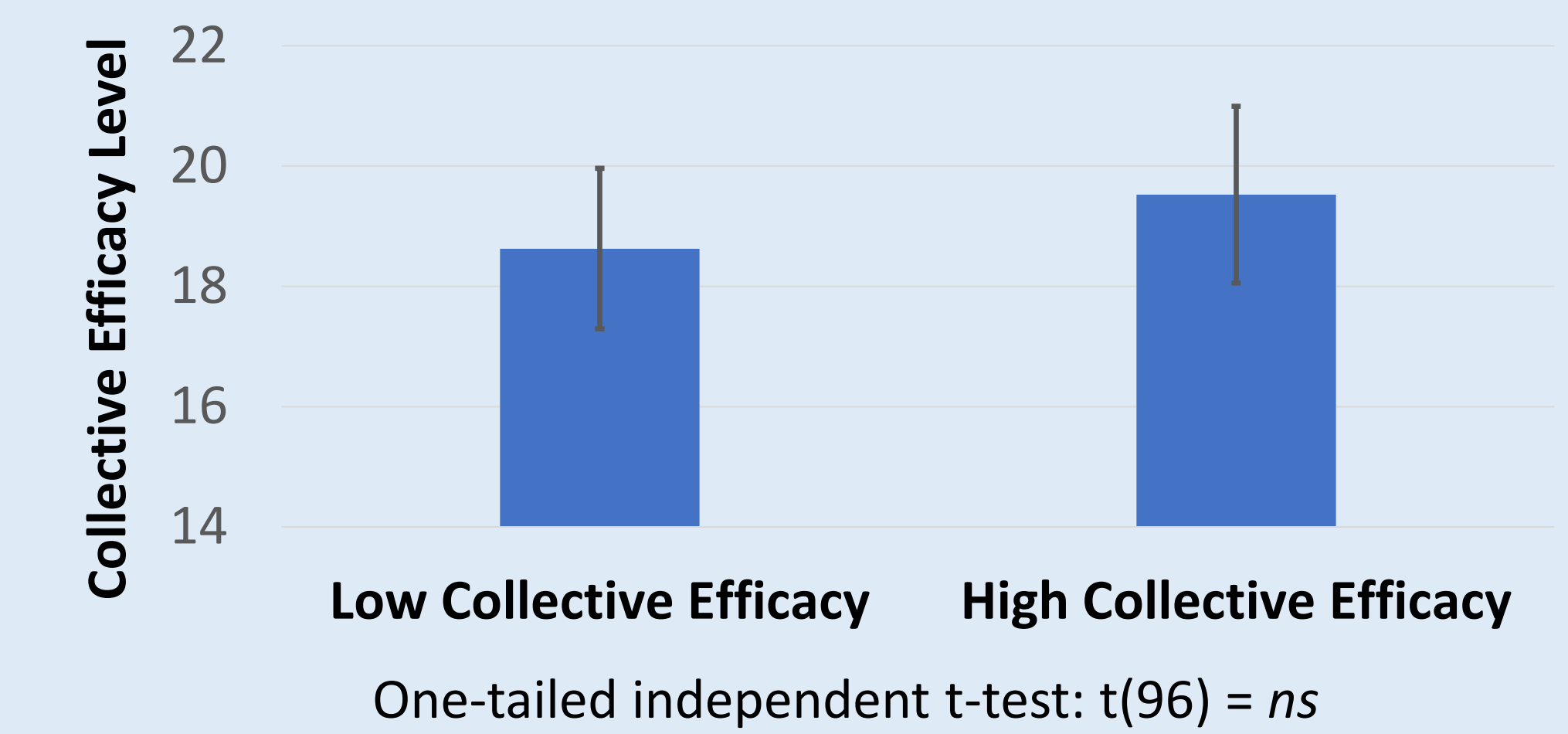


Figure 2: Low vs High Self-Efficacy Conditions



## Results

Figure 3: Low vs High Collective Efficacy Conditions



## Discussion

- The perceived threat and self-efficacy messages worked as intended.** Individuals in the high threat conditions and high self-efficacy conditions indicated higher perceived threat and self-efficacy than those in the low threat and low self-efficacy conditions, respectively.
- The collective efficacy messages did not work as intended.** There was no difference on collective efficacy between the high and low collective efficacy conditions.

### LIMITATIONS

- Results may be limited by the small sample sizes in groups.
- Results may not generalize to people who are not women, given that 85% of this sample identified as female.

### FUTURE DIRECTIONS

- To strengthen the message manipulations, the messages were presented to staff at DC's Homeland Security and Emergency Management Agency (HSEMA) and modified based on their feedback.
- A second pilot study was conducted in Spring 2024 (results pending).
- Findings from these two pilot studies will inform the final messages, which will examine how these message manipulations impact preparedness.

View the messages used in this study and the most recent version of the messages here!

